VACCINATION,

CONSIDERED IN REFERENCE TO

A RECENT ACT OF PARLIAMENT,

BY

ONE OF THE SURGEONS,

TO THE

MELKSHAM UNION.

SIXPENCE.

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TO THE

BOARD OF GUARDIANS,

OF

THE MELKSHAM UNION,

THE FOLLOWING OBSERVATIONS ARE RESPECTFULLY

ADDRESSED BY

THEIR MEDICAL OFFICER,

AND OBEDIENT SERVANT,

THE AUTHOR.

PREFACE.

The Statements contained in the following pages, being intended rather for public than for professional perusal, require little apology for their introduction. The great intrinsic consequence of Vaccination to the mass of the population, — its particular importance at the present moment, when strong doubts of its efficiency exist, — the satisfactory results of some late experiments, and the recent interference of the legislature on behalf of its practice, invest the question with additional interest. To allay popular fears, to answer popular objections, to establish popular confidence, are my present objects. In attempting these I lay claim to no originality, either in statement or opinion, but have simply endeavoured to render the statements and opinions of others in a more available and popular form.

The attention of the profession has been latterly attracted to this subject, and it is gratifying to add that their investigations tend eminently to fortify our confidence in Vaccination. These investigations and their results I have here endeavoured to detail, being convinced that the acquaintance of the public is *alone* necessary to facilitate the practice of Vaccination. Controversy therefore is not my purpose: but with an anxious wish to do justice to the task I have undertaken, I am aware that I may not only have overlooked much that is important, but have represented very imperfectly that which it has been my object to describe.

Trowbridge, Nov. 5, 1840.

VACCINATION,

IN REFERENCE TO

A RECENT ACT OF PARLIAMENT.

In the year 1804, Dr. Monro, Professor of Anatomy and Surgery at Edinburgh, a Fellow of the College of Physicians and of the Royal Society, declared that, in his opinion, "*the consequences of Vaccination were so dangerous to the public, that the practice ought to be prohibited by Act of Parliament.*" At this time the experiments of Dr. Jenner had been subjected to public and professional criticism for upwards of six years, and their success had been attested by the greatly diminished mortality from small pox in those districts where cow pox had been introduced. Like many others, however, of those great and original and scientific men who devote their time and talents to the benefit and amelioration of their species, Jenner was destined to encounter not only the prejudices of the ignorant, but the more powerful opposition of his professional brethren. There can be little doubt but that, in many cases, this opposition was prompted by the unworthy jealousy of men who were themselves incapable alike of originating or prosecuting so great and comprehensive a conception. Yet, possessing as they did the confidence and direction of the public mind in matters of medical science, they were enabled, by their dictatorial presumption, to retard the progress and to darken the prospects of this great discovery. It is certain that to this

very day, prejudices exist against Vaccination, in all classes of Society, which are traceable to this source, and which it will be difficult to suppress by mere legislative enactments. But it is not to be denied that the objections of others originated in a sense of duty; and though these objections were for the most part speculative and theoretical, yet, in the absence of that sufficient statistical and practical evidence on the subject, which, from the lapse of time and the labors of scientific enquirers, we now so fortunately possess, much suspicion attached to the practice.

In legislating for the practice of Vaccination the Government of this Country has performed a solemn and necessary duty. Compulsory Vaccination is not to be regarded as an infringement of individual liberty, provided such compulsion be anticipated or accompanied by an effort for the removal of the existing antipathy. It is only to be regretted that, in the recent enactment, England has but *followed the example* of some of the continental governments, which, in this matter, have been first to perform the duties of paternity to their subjects. It would have been worthy of this great and philosophic and *free* nation to have led the van in requiring of its people, *for their own protection*, the performance of that internal quarantine which this practice affords. Yet, until within a very recent period, it would not have been, by any means, to the advantage or credit of England to have contrasted with her own, the continental regulations, with respect to Vaccination.

It is well known that, in this country, the exposure of a person labouring under a contagious disease has long been an offence punishable at common law by fine and imprisonment; and of late years, several convictions have been obtained, in consequence of the exposure of persons affected with small pox. Yet the actual practice of small pox inoculation has been permitted, almost without an exception, and with an impunity and cheapness which renders

it a constant source of epidemic diffusion in many localities. It is, however, creditable to the profession that, with very few exceptions, it refused to inoculate small pox. The practice was, on almost all occasions, to be traced to unprofessional persons, who had taken up the lancet or the stocking needle, regardless of the consequences, and thus disseminated the contagion to an alarming extent. In the course of last year it is known that, in one parish alone, this murderous trade was pursued successively by *a miller*, *a blacksmith*, *an old woman*, *and a dissenting preacher*, and there occurred in consequence, no less than three hundred cases of natural and inoculated small pox. In some districts the prejudices against Vaccination were far from weak; and as I shall shew presently were neither wholly unjustifiable or unfounded, when regarded as depending upon the biassed representations of the ignorant or *designing*, and as existing in the readily prejudiced minds of those, to whom such representations were addressed. Amongst such a population, small pox inoculation *is still* most extensively practised; and in many cases it is most difficult to induce the parents to submit their children to Vaccination, they generally preferring to give them, (to use their own expression) "the real thing." In one district of a large agricultural union in Wiltshire, in which three years ago I vaccinated three hundred and fifty children, I found that, in numerous instances, the poor preferred paying for small pox inoculation, rather than allow their children to have the cow pox, although gratuitously furnished to them at the expense of the several parishes; and I am sure from my own observation, that the prejudices of the parents were more frequently *overruled* than *satisfied*. This neighbourhood was often visited by small pox inoculators, who were, for the most part, obscure, ignorant and mercenary persons, and who pandered to the fears and preju-

dices from which they derived their disgraceful earnings.

Such was the state of popular feeling in reference to Vaccination, when, on the 23rd July, 1840, (just thirty six years after the celebrated antivaccine anathema of Dr. Monro,) an Act was passed to provide for and enforce the practice of Vaccination throughout England, Wales, and Ireland. It directs the Guardians of the Poor Law Unions, to contract with their medical officers, or other qualified medical practitioners, for the Vaccination of *all* persons not previously vaccinated, who shall be residing in the Union. It provides for a report or registration of all persons so vaccinated *successfully;* and enacts that any person who shall produce small pox, by inoculation or other means, or who shall wilfully expose *any person* affected with that disease, or *any thing* impregnated with the contagious matter, so as to endanger others, shall be liable, on summary conviction before two justices of the peace, to be imprisoned one month.

It will be observed that whereas this act inflicts a penalty for small pox inoculation, it merely provides for the performance of Vaccination, *without punishing its neglect.* As the government has hitherto taken no measures to obviate or remove the prejudices to which I alluded, as impeding the universal reception and prevalence of Vaccination, it has, in this respect, acted with a necessary and cautious moderation. The law is for the present, sufficiently stringent: it is a protective statute, and acts as a sort of compromise. On the minds of the profession in general there exists no doubt as to the efficiency and permanency of Vaccination, to the greatest extent of protection *possible*, provided it have been properly and efficiently performed. Cases of failure occur, but these I shall presently endeavour to account for or explain. On the part of the public, however, and especially the lower classes,

strong objections exist; and until some general and well directed effort have been made, sanctioned by the government of this country, to remove these erroneous impressions, by a representation of the truth in a form available to the large mass of the population, it would be unwise, and perhaps unjust, to enforce Vaccination under a penalty.

The prejudices against Vaccination, I believe to arise from the following causes:—

I. The want of confidence in cow pox as a preventive or preservative from small pox.

II. The doubt as to the permanence of the protective influence of cow pox.

III. The fear of the communication of some dangerous constitutional or severe cutaneous disease to children vaccinated with impure lymph.

These are the chief sources of dissatisfaction and anxiety to parents, and they admit of popular and satisfactory replies.

I. As the case now stands, the legislature of this country has, by its late enactment, accepted and acted upon the opinion of the profession, as to the general propriety and efficiency of Vaccination; and has declared that the profession are alone competent to conduct its practice with safety or to ensure its success. All cases of *reputed* Vaccination will henceforth be considered as no Vaccinations at all, unless they have been performed, and passed under the review of a competent professional judge, who has witnessed and compared the various stages of the affection. To frequent neglect on this point I am convinced, that much of the disrepute attaching to Vaccination, as a preservative from small

pox, has arisen. It has been thought sufficient that the child has had an incision made in its arm, and that inflammation and pustular eruption has succeeded; an entire satisfaction has then possessed the mind of the parent as to its future immunity from small pox; and it has been considered quite unnecessary to call again upon the operator, for the purpose of seeking his opinion as to the security of the child. If the operator in such a case were a druggist, his other avocations would seldom allow his seeking the child, if it were not voluntarily brought to him again for inspection. And where Vaccinations are performed by a medical man, (I speak from my own experience,) a large proportion of children have to be visited at the houses of their parents, who are wholly regardless of his desire to see them again at his surgery: they are perfectly satisfied with the declaration of some "knowing woman," who unhesitatingly pronounces upon a disease which she is entirely unable to recognize. If at some future period, the children should be subjected to the ravages of small pox, such cases are most incorrectly adduced as instances of the failure of Vaccination as a preservative influence; and frequently no small discredit attaches, in the minds of the public, to its advocates. To this cause I attribute *the vast majority* of reputed failures, and under these circumstances, and to obviate such future mischances, it is very judiciously enacted that "The medical officer or practitioner shall from "time to time make a report to the guardians of the "number of persons Vaccinated *successfully*." It thus becomes the incumbent duty of the appointed Vaccinator, to *trace and watch the result of all* Vaccinations. A most correct statistical return is hereby ensured, and one which, I am persuaded will redeem the practice from much unmerited obloquy.

Such is the existing abuse in the performance of Vaccination to which so many failures are attribu-

table, but many others yet remain to be accounted for or explained, as occurring after the most successful Vaccination. How does the case stand in respect to these?

In 1798 Dr. Jenner confidently announced that the cow pox, when it had once fairly passed through the human body, removes for ever the susceptibility of small pox. He further asserted that cow pox was capable of extirpating small pox from the earth. At present, the most strenuous advocate for Vaccination is compelled to admit the concurrent testimony of the public and the profession to the contrary. It cannot be controverted that in numerous and daily recurring instances, in which Vaccination has been performed by a competent operator, its progress watched and its results pronounced satisfactory, that the susceptibility of small pox has not been destroyed. In many such cases, at some future period of life, the small pox has occurred in its most malignant form, and has terminated fatally. It is clear, therefore that the opinion of Jenner was premature; and his failure will serve to lessen the too sanguine expectations of every future medical discoverer. The mind of man is composed of curious materials. Not only does system warp the judgment, but having once unequivocally adopted an opinion, and having gone great lengths in propagating it, few have honesty, candor or resolution to retract. It is impossible to impute to Jenner any dishonesty of purpose. His error was that without waiting for sufficient statistical and practical results, he concluded theoretically. Too much inclined to generalise, too eager to realise his honorable purpose, he forgot to calculate or to anticipate exceptions. In many professions, *but in none more than in the science of medicine*, is the mind inclined to systematise; and as the field is extensive and difficult of accurate observation the danger of system is the greater.

So far, the results of experience seem to militate against the practice of Vaccination, and in some measure to justify the first popular objection; but it is necessary to suspend the judgment on this question, till other facts are adduced which are essential to this argument.

At the same time that Jenner announced the unlimited power of the cow pox, as *preventive* of small pox, he stated that they were essentially the *same* disease; that the latter was only a malignant variety of the former, the parental or original disorder being the cow pox. This theory was pointedly marked by the phrase, "*Variolæ Vaccinæ*" (cow smallpox) under which name cow pox was first introduced to the notice of the scientific world. The malignant variety as it appeared in man, he denominated "*Variolæ Humanæ*" (human smallpox) He further explained the *preventive* or preservative power of cow pox, on the principle of its being in reality a small pox, which, in passing through the body of the cow, had become modified, and its virulence destroyed.

Dr. Jenner never brought forward any direct experiment in proof of this opinion; but attempts have been recently made to substantiate it, and with the most entire success. Mr. Ceely, Surgeon to the Buckinghamshire Infirmary, has instituted a series of beautiful experiments, which, in the opinion of the Provincial Medical and Surgical Association, to whom they have been submitted, have fully established this question of *identity*.

With vaccine lymph, or cow pox matter, taken from a human arm, which had been vaccinated from the cow, he succeeded in producing cow pox in a second cow. This is called *Retrovaccination*. This Retrovaccine matter, taken from the second cow, was sent to the small pox Hospital, where, under the inspection of the physicians, it was efficient in producing cow pox in man a second time.

With variolous lymph, or small pox matter, taken from a human arm, affected with natural small pox of the ordinary virulence, he inoculated a cow. An eruption was produced upon this cow, in all respects similar to that generally observed upon cows in other dairies, affected with cow pox. This is called Variolation of the cow. Matter was then taken from this cow and inserted into a human arm, not previously vaccinated, on which it produced the common vaccine or cow pox pustule, in no respect differing from that generally observed.

These experiments were performed in sufficient number to preclude mistake, and were attested by many members of the medical profession, and by veterinary surgeons, who, in each case, were enabled to recognize the nature of the disease produced.

If the too sanguine hopes of Jenner overcalculated the efficiency of Vaccination, as *preventive* of small pox, to him at least this eulogium is due; that *his* philosophic foresight and sagacity first conjectured the *identity* of these diseases. This identity is now redeemed from the regions of conjecture. cow pox can no longer be considered *preventive* of small pox. It is essentially *the small pox itself*, and the influence of this fact upon the first objection will now become apparent.

HUMAN SMALLPOX is supposed to have made its first appearance in the sixth century. Procopius gives the history of a disease, previously unknown, which first commenced at Pelusium, in Egypt, A. D. 544. The obscurity of its origin, the difficulty of its cure, the universality of its devastations, and, above all, an *immunity from second attacks*, bespeak this epidemic to have been true human smallpox.

The origin of COW SMALLPOX is recorded by no exact date, and is to be sought for only in the dark recesses of rural tradition. It is usually a more mild disease, but may appear in the cow in a very aggravated, as well as very mild form, and

communicate to man an equally aggravated distemper. This aggravated form or variety, as it appears in the cow, so closely resembles, in its characteristic features, the human smallpox, that no doubt of their identity exists in the minds of those who have made a strict comparison, even independently of the experiments to which I have referred. This aggravated form has appeared in different ages and in different localities. It has existed amongst the cattle simultaneously with the smallpox in man, and both have pursued their victims through every quarter of the globe. It appeared in England in 1745, again in 1770, and continued till 1780; and the local remains of this epizootic still occasionally shew themselves with much severity. It now exists in Bengal and other parts of Asia, in a *fatal and pestilential form;* and, by Vaccination with the matter, communicates to man a disease of similar severity, and closely resembling the natural human smallpox. The ordinary cow smallpox, when introduced into the human system by Vaccination, produces a disease which, for the sake of distinction, may be appropriately called, —

Humanized cow smallpox. This disease is too well known to require description; but it is to be remarked that there is a singular analogy, both in physiology and anatomical character, between this and human smallpox. In the character of the eruption itself, the period of its duration, and, above all, in the fact, that it can be *seldom* reproduced after it has once been effectually communicated. *There is an immunity from second attacks*, as complete as in human smallpox; in its points of difference from which, there is no greater discrepancy than occurs in the case of many other cutaneous diseases, which are yet allowed to be identical. I may instance the numerous forms of Scarlatina, the still more numerous varieties of Tinea upon the scalp; and indeed, the varieties and degrees of

human smallpox itself scarcely differ less amongst each other than its more mitigated forms are distinguishable from humanized cowpox.

It is admitted that small pox, sometimes, nay frequently, occurs after *successful* Vaccination. In many constitutions indeed there seems a peculiar susceptibility of the variolous contagion. But, it is no less true, that the cases in which natural human smallpox has recurred and proved severe or fatal are of equal frequency, with the instances of its occurrence after successful Vaccination. The deaths from small pox after small pox in this country correspond *very nearly* with the deaths from small pox after Vaccination. This fact, though singly feeble, is yet, I conceive, of much importance, as another collateral testimony to the identity of these diseases.

The susceptibility of small pox seems universal throughout the human race. As a general and practical rule all are alike exposed to the contagion.

Natural human smallpox. With our present population, and calculating, according to the proportion of small pox fatality before the introduction of Vaccination, 80,000 would now annually fall a prey to its devastations: and, throughout this nation, the desperate chance of one in five would exist against the life of every infant, in consequence of this disease. To the fatality must be added the frightful amount of personal deformity — the frequent and entire destruction of vision,—and the shattered constitutions which this loathsome disease produces. *Nor is the liability to second attacks wholly lost. Recurrence is as frequent as after* successful *Vaccination.*

Inoculated human smallpox. In 1721, inoculation was introduced, and was the means of wonderfully checking the malignance and fatality

of the natural distemper. Yet death sometimes resulted from inoculated small pox, and *the system was as liable to reinfection as now after* SUCCESSFUL *Vaccination.* The great evil of inoculating with small pox consists, however, in the fact, that it proves, especially in our rural districts, a constant source of contagion. By the inoculation of a few children, the disease is introduced into a town or village, and communicates, by contagion, the natural small pox to all the uninoculated and unvaccinated persons of the district. From an examination of the London bills of mortality during forty-two years, Dr. Jurin ascertained that even after inoculation had been introduced, one in fourteen of all that were born perished by small pox. Of persons taken ill in the natural way one in three died of it, and *even of the inoculated* one in fifty fell a victim, Condorcet, in recommending the introduction of Vaccination in France, exclaimed "We are decimated by the small pox." The result is that, while inoculation is individually advantageous in mitigating the intensity of the natural disease, it yet exposes a great part of the community to the influence of its worst forms. During the great prevalence of inoculation, between 40 and 50,000 persons annually perished of natural small pox, and, in many instances, this mortality was attributable to disease produced by inoculated infection.

HUMANIZED COW SMALLPOX. Vaccination has now been introduced to public notice for forty-two years, and no medical innovation ever challenged so general an enquiry, or obtained so universal a reception. The statistical evidence of its effects *at this moment,* is well and briefly stated in the report of the Medical and Surgical Association, at their meeting at Liverpool, on 25th July, 1839. The report says, "During the prevalence of inocu-
"lation, and before Vaccination was used, between

"40, and 50,000 annually perished by natural and "inoculated small pox; and, if the vast increase of "population were taken into account, 80,000 would "now annually fall a prey to its ravages, were it "not controlled by this life-preserving power. In "the half-year ending December 31st, 1837, there "died of small pox in England and Wales, only "5,811, *of whom the vast majority had never been* "*vaccinated.*" We find, therefore, reckoning by the whole year, and taking into consideration the average mortality of small pox, that no less than 68,000 were saved from death, during the year 1837, by the agency of Vaccination. Of the remaining 12,000, I am prepared to believe, from my own experience of the frequency of such an occurrence, that there were not twenty deaths occurring after *successful* Vaccination.

I have instituted this comparison for the purpose of arriving at the following conclusions : —

1st. That small pox and cow pox are identically the same disease, and differ only in their degree of malignity.

2nd. That Vaccination is therefore no longer to be considered as the *preventive* of small pox, but rather as the communication of a milder form *of that disease itself.*

3rd. That we have no reason to conclude that the occurrence of small pox after *successful* Vaccination is more frequent than its recurrence after a first attack of a natural or inoculated small pox.

4th. That the permission of inoculation with small pox is injurious, as maintaining a source of contagion of the worst forms of small pox.

5th. That the occasional recurrence and fatality of small pox, whether after *successful* Vaccination,— after inoculation,—or after prior small pox,—is an inevitable law of that disease, against which no known human agency can avail.

6th. That such an unfortunate failure, occurring

to our own experience, is not to be regarded as any argument against the efficiency of Vaccination. as preservative from the horrors of small pox.

7th. That since human ingenuity and science are impotent in the prevention of an occasional failure, we conclude, that cow pox and small pox must exist together, and that the history of Vaccination offers no exception to that general law of our physical and moral nature, by which good and evil are blended.

II. The question of the *permanence* of the protection offered by Vaccination is one which, now especially, agitates the public mind. By many, even of the profession, it has been believed that there is a decadence or evanescence in the influence of cow pox; and much testimony has been adduced in support of such an opinion. This decadence has been attributed to two causes:—

First. The lapse of *time* that has occurred since the original derivation of the matter from the cow. This idea was never countenanced by Jenner, nor has it ever been generally received by medical men, at least in this country. It is, nevertheless, a favourite doctrine with the public; but there appear to be no grounds whatever for the adoption of such a notion. Neither *analogy* or *experience* are in its favour. It is contrary to the *analogy* of small pox matter, which has undergone no such change, since our traditionary acquaintance with it; but remains as virulent as it is reported to have been in the days of Rhazes and Avicenna; and from the identity, (the essential identity), of the diseases, cow pox should be alike unchanged by transmission. On the ground of *experience* it is known that persons vaccinated by Dr. Jenner himself, in the very infancy of the practice, before such deterioration could possibly

have commenced, have yet been attacked by small pox in after life, though the proportion of such instances bears no comparison with the vast majority who, having been fully exposed to the contagion, have yet escaped with impunity.

To obviate the objection, however, and for the more complete satisfaction of the public mind, it has been proposed to return to the cow, as the source of lymph; and to do away, more or less, with the practice of vaccinating from one individual to another. On this subject Mr. Ceely remarks, "My own repeated applications to the cow have "been chiefly for the purpose of experiments, *for* "*the satisfaction of patients*, and the accommo- "dation of friends, not from any belief in its superior "protective efficacy over active humanized lymph. "But when lymph is found uniformly deficient in "infecting property, prudence dictates its discon- "tinuance, and urges the adoption of a new supply." But in addition to the deterioration by *time* it has been feared:

Secondly. That the vaccine lymph has been deteriorated by the *successive Vaccination from each other of children*, all of whom have been, from various causes, indisposed to take on the perfect disease; and that, by a continuance of such degeneration, the virus may at length wear out altogether. Allowing the probability of such cause of deterioration, I believe that the fault is rather to be attributed to the recipient child, than to that child from which the lymph is taken. There are characteristic features of the true vaccine vesicle which can hardly be mistaken by the experienced practitioner; and surely no man would choose lymph from a child in which such characteristics of active intensity were wanting. But on the part of the child about to be vaccinated with such good lymph, many causes may exist for non-infection. The presence of some other cutaneous disease, the existence of

cerebral or intestinal irritation, and the progress of dentition, all seriously interfere with the success of Vaccination. I have myself often vaccinated children three and four times unsuccessfully, without being able to attribute my failure to any other than such a constitutional derangement as was incompatible with the existence of cow pox; being assured, from experiments on other children, with the same lymph, of *its* intensity and perfection. In many such cases, an imperfect vesicle would be formed on the sick child; of course equally unfitted for individual protection or for the purposes of transmission. I have no doubt, however, but that such lymph has been frequently used by unprofessional vaccinators, upon other children, to the great prejudice of Vaccination.

One more point is worthy of notice in arguing this question of decadence or deterioration. In the report of the association above alluded to, they "regard it as important to enquire, whether a *suc-*"*cessful* revaccination proves that the individual "who is the subject of it, is, thereby, shewn to have "lost his vaccine protection, and consequently to "have been liable to small pox contagion." "That "idea" (they state from evidence) appears to be "unfounded." Several years since, in a part of the country where I was then residing, the small pox suddenly appeared epidemically. I visited patients affected with it for several days, and as this was my first acquaintance with the loathsome disease, I became somewhat anxious about my own safety, though I had been *successfully* vaccinated in early life. I revaccinated myself, and the result was the appearance of a vaccine vesicle and pustule, possessing in all their different stages the characteristic marks. At the same time it will be borne in mind I had been exposed to variolous contagion for many days, and without injury, before revaccination was attempted. I consider the second affection, there-

fore, to have been *a local effect* merely; and that the constitution had been already saturated by the protective influence of the original vaccination.

In order to complete the analogy of these diseases, I must add the interesting fact that in those cases where small pox has previously occurred, the subsequent inoculation with variolous matter has often produced a second attack of small pox, or, at least, the local effect of pustular eruption. And, further, revaccination succeeds or otherwise, *almost exactly in the same ratio*, whether it be performed after a previous attack of cow pox or of small pox. The same remark applies to the cases where inoculation with variolous matter has been attempted after previous successful Vaccination. This singular and striking analogy should be borne in mind as illustrating the essential identity of the diseases. In proof of this statement I copy the following table from "the report."

Vaccinated after	small pox,	with success	32
Ditto	ditto	modified	26
Ditto	ditto	without effect	42
			100

Revaccinated with success	34
Ditto modified	25
Ditto without effect	41
	100

It is therefore considered that systematic revaccination, *practised in the absence of epidemic small pox*, is uncalled for, since, as I have shewn, the apparent success of a second Vaccination, (which is for the most part attended with local symptoms only, and is accompanied by little or no constitutional disturbance,) by no means proves that there had been any real decadence of the protective influence of the first. Such a system is moreover liable to many objections;

as implying a suspicion that the virtues of cow pox are less permanent than we believe them to be; and as leading to inattention, on the part of operators, as to the success of first Vaccinations. To neglect on this point I am sure that a large proportion of the reputed failures are attributable. *Where, however, malignant small pox prevails,* EPIDEMICALLY, *and to a great extent in any district,* second Vaccinations should undoubtedly be performed; especially where personal fear is entertained. In Prussia, under such circumstances, revaccinations are uniformly adopted. Recruits are vaccinated on entering the army, without exception, and without reference to previous Vaccination; and the third part of the whole Prussian Army is vaccinated once every year. Since this has been done small pox has been unknown amongst the Prussian Soldiers. As small pox does occasionally occur after *successful* vaccination, it will hereafter become the interest and duty of the parochial authorities, where small pox rages as an epidemic, to insist upon revaccination, at least amongst the poor, under the discretion of their medical officers; both from motives of humanity to the poor themselves, and for the conservation of the public purse; since the cost of coffins, and the payments to widows and orphans, would probably be a heavier charge upon the parish, than would be incurred by paying a proper remuneration to the surgeons, for averting this calamity by revaccination of all adults.

III. Much discredit frequently attaches to the surgeon in consequence of the appearance, after Vaccination, of some troublesome anomalous eruption, and it is consequently objected by the parent, that sufficient care has not been taken to secure the choice of lymph from a "healthy child" Of course the medical man is blame-worthy who vaccinates

with lymph taken from a child which is the subject of scrophula, ringworm, or which has the general cachectic appearance indicative of constitutional disease. And I think that, on all occasions, a due and deliberate examination should take place of the state of the *entire* cutaneous surface, before lymph be taken for use.

It must be added, however, that this charge of neglect is often unjust, and arises from ignorance on the part of the parent. It often happens that during the progress of Vaccination or soon after its completion, a papulous eruption of a lichenous character shews itself on the extremities, and extends to the trunk of the body. I have myself, more than once seen such an eruption confined to the nape of the neck, close to the roots of the hair, and to the space between the shoulders; leading to the accusation of having communicated ringworm. It generally continues for a week, but occasionally lasts much longer, and is chiefly met with in children of full habit, where numerous vesicles have been raised upon the arm. As a matter of comparison, inoculation is at all events as likely to communicate cutaneous disease as Vaccination, and this ceases to be an exclusive objection. Nor can there be a doubt but that the perfection of the vaccine pustule, —the disease having run its regular course and produced what is called "a fine head," is, to a very considerable extent, a guarantee that the child is free from all other cutaneous or constitutional disorder; since the existence of any such complaint would in all probability, have delayed or prevented the success of Vaccination. This is not an infallible test; but, as a general rule in medicine, this aphorism is as correct as it is well known;—that the presence of one disease retards or precludes the existence of another;—the existence of one disease is incompatible with the development of another.

I have said that, during the presence of any other cutaneous or constitutional disorder, there is an indisposition to take on the vaccine disease; — and that the success of Vaccination is hereby prevented. There can be no doubt, however, but that, in many instances, this indisposition to become affected with cow pox is entirely independent of the presence of any other complaint, and must be referred to a certain constitutional inaptitude to receive the vaccine infection. With such a case I am personally acquainted, in which, notwithstanding repeated Vaccinations to the extent of five or six times, at various periods of life, and under every variety of constitutional circumstance, the cow pox infection has been uniformly withstood. In the same manner some constitutions have uniformly resisted inoculation with small pox, or exposure to its contagion. Thus the person above referred to has been inoculated for small pox without success—has associated with her relatives, and has actually slept in the same bed with one of them during the existence of the disease, yet without receiving the contagion. It becomes, therefore, a most interesting question, both to the profession and the public, to ascertain whether the inaptitude to cow pox denotes a similar inaptitude to receive small pox contagion. Experience seems to shew that the predisposition to the two complaints is the same, and that a child who has altogether resisted the cow pox will be found equally insusceptible of small pox: and entertaining as I do no doubt of their essential identity, I should certainly anticipate such a result, apart from experience.

An experiment was some years since proposed and extensively practised for illustrating or determining the success of any Vaccination. It was presented to public notice in 1802, and was called, from the name of its inventor, *Bryce's test*. It con-

sists in the insertion of fresh lymph into the arm on the fifth day after Vaccination, and depends upon the physiological fact that the vesicle produced by the second insertion is hurried forwards, and, overtaking the first, maturates with it on the tenth day. This second vesicle is indeed smaller than the first, and the areola around it is contracted, but its characters are essentially similar. It shows whether or not constitutional influence has been exerted by the primary Vaccination, and although, in consequence of its merits having been overrated, it has fallen into unmerited disrepute, it still deserves the attention of the profession. I have noticed it here because I have often had patients object to its performance, as being something unusual and to which they were not accustomed; but as no measure should be rejected by the medical man which increases his means of satisfactory diagnosis, so no parent should refuse to accede to his requirements, especially when compliance is unattended with pain. I am persuaded of the value and importance of this test and of its claim upon public and professional confidence. It is of use as determining whether the effect of a first Vaccination have been *constitutional* or merely *local*. It does not profess to decide whether this constitutional effect have been *complete* or otherwise, but the experienced eye of the surgeon will be able to distinguish the true or *complete* vesicle by other characteristic marks. With these the principle of Bryce's test has nothing to do, but it *does* supply a most valuable criterion to substantiate that of which other evidence is often wanting. The Reporters state. "It is a very simple and beautiful illustra-"tion of the constitutional effects of Vaccination, "and deserves to be encouraged."

It is usual in vaccinating to make several punctures, either in one or both arms; but it is often with the greatest difficulty that a parent can be

induced to allow lymph to be taken from its child's arm, for the supply of the surgeon. Provided other vesicles be left untouched, to run their entire course, the security of the child is in no way lessened by robbing *one* of the vesicles of its lymph. The success of Vaccination is much more frequently interfered with by the carelessness of parents themselves, who allow the arm to be rubbed, and *all* the vesicles ruptured and destroyed. It is also objected, but is impossible to suppose, that puncture of one vesicle with the clean lancet of the surgeon can produce irritation or inflammation in the arm of an infant.

One other point only appears to require attention, as seeming one of popular importance. It relates to the *period of life* at which Vaccination ought to be performed. The most eligible period seems to be from the third to the fifth month after birth; beyond which time it should never be postponed, but for some specific reason: such as the existence of actual disease, or general constitutional debility. After this period, the diseases consequent upon dentition and other disorders are accustomed to arise, and must materially interfere with the success of the operation. In many of our rural districts, Vaccination is performed periodically, at intervals of two, three, or even four years: a practice which permits and necessitates the accumulation of a large number of unvaccinated children, exposed, on the first introduction of an inoculated child, to the murderous infection. In such localities, as I have shewn, it is no unusual thing for hundreds of infants, the majority of them upwards of three years old, to fall a prey to this sweeping devastation. Such a state of things should never exist: and the late enactment, by obviating such a practice in future, may be rendered the means of saving many valuable lives. Considering the vast importance of Vaccination, and on a review of all the arguments I have ad-

duced, I cannot better express my own opinion of its efficiency than in the closing and valuable remark of the Reporters. They say, "The "particulars connected with the successful em- "ployment of this life-preserving agent were de- "duced from Jenner's matured and well digested "investigations, with a degree of precision and "perfection, from which future observations have "taken nothing away, and to which they have added "but little. His whole existence was one con- "tinued struggle to uphold what he felt and knew "to be truth; and it is unquestionable that "most of the anomalies and difficulties, which have "marred and obscured the practice of Vaccination, "may be traced to the errors of those who distrust- "ed his doctrines and disregarded his precepts."

Should the foregoing observations tend in any degree to confirm the public mind, or to facilitate the success and ensure the practice of Vaccination, in the Union with which I am more immediately connected, my intention will have been adequately fulfilled.

THE END.

Diplock, Printer, Trowbridge.